ABSTRACT:

A volume of 40, 000 m3 of protruded granitic rock mass was encountered and disrupting construction of a road alignment in Bandar Seri Alam, Johor, Malaysia. As a result, blasting operation was adopted to break this slightly to moderately weathered zone massive rock mass into manageable sizes so that the rocks can be removed. However, it was found that the excessive overblasting has caused widening of major joints, excessive overbreaks, unstable and loose overhanging blocks that created at least 2 sets of new fractures on the rock face which has to be trimmed with a pre-splitting blasting method. A post – construction geological assessments carried out on the rock slope indicate that majority of the unstable elements are essentially due to excessive blasting and lacking design of blasting operation. The aim of this study is to evaluate instability of the rock slope and indicate that it may have the potential to undergo planar, wedge and toppling failures. This can be achieved by using kinematic analysis on the discontinuities aided Georient software and also Slope Mass Rating (SMR) classification system. The analysis revealed that the rock slope has two possible modes of failure consisting of planar failure and toppling failure and the most hazardous zone is located in the middle of rock slope